

<u>DB Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
USPT,PGPB,JPAB,EPAB,DWPI	l15 and cation exchanger	30	<u>L16</u>
USPT,PGPB,JPAB,EPAB,DWPI	l14 not electrodialysis	279	<u>L15</u>
USPT,PGPB,JPAB,EPAB,DWPI	ion exchange column and lactic acid	296	<u>L14</u>
USPT,PGPB,JPAB,EPAB,DWPI	ep0265409	1	<u>L13</u>
USPT,PGPB,JPAB,EPAB,DWPI	ep265409	0	<u>L12</u>
USPT,PGPB,JPAB,EPAB,DWPI	ep-265409-\$ did.	2	<u>L11</u>
EPAB	ep-0265409-\$ did.	0	<u>L10</u>
USPT,PGPB,JPAB,EPAB,DWPI	ep-0265409-\$ did.	0	<u>L9</u>
USPT	1,6-HEXANEDIAMINE AND L7 AND L6 AND L5	8	<u>L8</u>
USPT	ALCOHOL AND ZIRCONIUM	23505	<u>L7</u>
USPT	UREA OR CARBAMATE	91190	<u>L6</u>
USPT	DIURETHANE OR POLYURETHANE	107640	<u>L5</u>
USPT	l2 and l3	20	<u>L4</u>
USPT	peracid and 562/6	50	<u>L3</u>
USPT	l1 and distill\$5	11155	<u>L2</u>
USPT	hydrogen peroxide and acetic acid	18364	<u>L1</u>

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=> s 50-21-5/prep
34169 50-21-5
2771543 PREP/RL
L2 1876 50-21-5/PREP
(50-21-5 (L) PREP/RL)

=> s 50-21-5/pur
34169 50-21-5
150304 PUR/RL
L3 187 50-21-5/PUR
(50-21-5 (L) PUR/RL)

=> s 12 or 13
L4 1876 L2 OR L3

=> s 14 and cation exchanger
216743 CATION
79238 EXCHANGER
16733 CATION EXCHANGER
(CATION(W) EXCHANGER)
L5 16 L4 AND CATION EXCHANGER

=> s 15 not electrodialysis
8378 ELECTRODIALYSIS
L6 15 L5 NOT ELECTRODIALYSIS

=> d 1-15 abs ibib

L6 ANSWER 1 OF 15 CAPLUS COPYRIGHT 2001 ACS
AB Purifn. of lactic acid by batch reactive distn. was carried out using a cation exchange resin [Dowex 50W]. Two reactions, esterification and hydrolysis, are involved and an app. with two distn. columns was developed and operated in a batch mode to ensure enough residence time in the re-boiler and column. The effects of operation variables such as catalyst loading, reactant mole ratio, feed concn., type of alc. and partial condenser temp. on the yield were studied. The products of esterification (Me lactate and water) were distd. into the hydrolysis column to be recovered as pure lactic acid. The yield of lactic acid increased as catalyst loading in the esterification column increased and reactant mole ratio and feed lactic acid concn. decreased. Methanol as a reactant gave higher yield than any other alc. The yield of recovered lactic acid was as high as 90%. The yield of lactic acid was closely related to the boiling temp. of the reaction mixt. in the esterification stage. The prodn. of lactic acid with high purity is of interest for use as feedstock in the food, pharmaceutical, cosmetics, textile, and leather industries.

ACCESSION NUMBER: 1999:784626 CAPLUS
DOCUMENT NUMBER: 132:94936
TITLE: Effects of operation variables on the recovery of lactic acid in a batch distillation process with chemical reactions
AUTHOR(S): Seo, Yongwon; Hong, Won Hi; Hong, Tae Hee
CORPORATE SOURCE: Department of Chemical Engineering, Korea Advanced Institute of Science and Technology, Taejon, 305-701, S. Korea
SOURCE: Korean J. Chem. Eng. (1999), 16(5), 556-561
CODEN: KJCHE6; ISSN: 0256-1115
PUBLISHER: Korean Institute of Chemical Engineers
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 12
REFERENCE(S): (1) Bessling, B; Chem Eng Technol 1998, V21, P393
CAPLUS
(2) Choi, J; International Journal of Chemical

1996, V28, P37 CAPLUS
 (3) Choi, J; Journal of Chemical Engineering of Japan
 1999, V32, P184 CAPLUS
 (4) Chopade, S; Reactive & Functional Polymers 1997,
 V32, P53 CAPLUS
 (5) Cockrem, C; US 5210296 1993 CAPLUS
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 2 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB An economically viable and energy-efficient method for the recovery of lactic acid from a medium contg. an alk. earth metal salt of lactic acid (e.g., calcium lactate) comprises: (a) reacting a conjugate base of an alkali metal (e.g., sodium bicarbonate) from a subsequent step with the medium to form a water-sol. alkali metal lactate salt (e.g., sodium lactate) and a basic compd. of the alk. earth metal (e.g., calcium carbonate); (b) sepg. the water-sol. alkali metal lactate salt and the basic compd. of the alk. earth metal; (c) splitting (e.g., contacting the salt with an acidic **cation exchanger**) the water-sol.

alkali metal lactate to form a conjugated alkali metal base and a lactic acid product (e.g., lactic acid or its derivs.); (d) sepg. the conjugated alkali metal base and the lactic acid product; (e) reusing the sepd. conjugated alkali metal base or a product thereof in the step (a); and (f) reusing the basic compd. of the alk. earth metal, sepd. in step (b), or a product of it to form an alk. earth-metal salt of lactic acid.

ACCESSION NUMBER: 1998:604890 CAPLUS

DOCUMENT NUMBER: 129:204427

TITLE: A process for the recovery of lactic acid using Group IIA and IA salts

INVENTOR(S): Eyal, Aharon Meir; Witzke, David; Fisher, Rod

PATENT ASSIGNEE(S): Yissum Research Development Company of the Hebrew, Israel

SOURCE: PCT Int. Appl., 35 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9837050	A1	19980827	WO 1998-US2695	19980212
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
IL 120279	A1	19991028	IL 1997-120279	19970221
AU 9862769	A1	19980909	AU 1998-62769	19980212
EP 970035	A1	20000112	EP 1998-905056	19980212
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
BR 9807458	A	20000509	BR 1998-7458	19980212
PRIORITY APPLN. INFO.:			IL 1997-120279	A 19970221
			WO 1998-US2695	W 19980212

L6 ANSWER 3 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB A process for the recovery of lactic acid from aq. solns. contg. at least one water-sol. lactate salt and having a pH of 4-14 comprises: contacting the aq. soln. with a **cation exchanger** which is at least partially in its acid form, said **cation exchanger** being water immiscible in both acid and salt form, whereby ion exchange is effected, protons are transferred from the **cation exchanger** to the aq. soln. to acidulate it and to form lactic acid therein and cations from the aq. soln. are bound by the **cation**

exchanger; reacting the cation-carrying cation exchanger to convert it into a cation exchanger which is at least partially in its acid form and to a second product, which second product is basic and comprises the cation of the salt; and recovering lactic acid from the lactic acid-contg. acidulated aq. soln.

ACCESSION NUMBER: 1998:239189 CAPLUS
 DOCUMENT NUMBER: 128:283875
 TITLE: A process for the recovery of lactic acid
 INVENTOR(S): Eyal, Aharon Meir; Elankovan, Ponnampalam
 PATENT ASSIGNEE(S): Cargill Incorporated, USA; Eyal, Aharon Meir; Elankovan, Ponnampalam
 SOURCE: PCT Int. Appl., 23 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9815518	A2	19980416	WO 1997-US17774	19971002
WO 9815518	A3	19980625		
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9748936	A1	19980505	AU 1997-48936	19971002
EP 932593	A2	19990804	EP 1997-911612	19971002
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
BR 9712228	A	20000125	BR 1997-12228	19971002
JP 2001506585	T2	20010522	JP 1998-517608	19971002
PRIORITY APPLN. INFO.:			IL 1996-119389 A	19961009
			WO 1997-US17774 W	19971002

L6 ANSWER 4 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB In the title process, an aq. salt soln. (e.g., monosodium citrate) is placed into a first compartment on one side of a cation exchange membrane (e.g., Neosepta CN-1) together with an org. amine extractant of limited water miscibility (e.g., trilaurylamine), and an aq. acid soln. (e.g., HNO3) is placed into a second compartment on the other side of the membrane. The free acid (e.g., citric acid) forms in the first compartment and collects in the org. amine extractant where it is recovered. The process is particularly suitable for the recovery of a carboxylic acid or an amino acid from its salt (i.e., from fermn. broths contg. them).

ACCESSION NUMBER: 1997:281923 CAPLUS
 DOCUMENT NUMBER: 126:263851
 TITLE: Cation exchanger membrane process
 for the recovery of carboxylic acids from carboxylate salts
 INVENTOR(S): Eyal, Aharon
 PATENT ASSIGNEE(S): Yissum Research Development Company of the Hebrew Univ. of Jerusalem, Israel; Eyal, Aharon
 SOURCE: PCT Int. Appl., 19 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 9711047	A1	1996-327	WO 1996-IL105	1996-09
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM				
IL 115346	A1	19991028	IL 1995-115346	19950919
CA 2232572	AA	19970327	CA 1996-2232572	19960909
AU 9668888	A1	19970409	AU 1996-68888	19960909
EP 863865	A1	19980916	EP 1996-929508	19960909
EP 863865	B1	20000531		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
BR 9610494	A	19991109	BR 1996-10494	19960909
AT 193515	E	20000615	AT 1996-929508	19960909
ES 2148785	T3	20001016	ES 1996-929508	19960909
US 6022992	A	20000208	US 1998-43419	19980528
PRIORITY APPLN. INFO.:			IL 1995-115346	A 19950919
			WO 1996-IL105	W 19960909

L6 ANSWER 5 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB Reidel-de-Haen VI-15, Dowex MWA-1 and Amberlite IRA-35 were employed for lactic acid recovery using model ferment. broth. The broth was first acidified by using a **cation exchanger** before sorption of lactic acid onto the basic sorbents. Lactic acid was completely recovered from the VI-15 column after 7 bed vols. (BV) of methanol, whereas only 64% was recovered from MWA-1 after 4.5 BV and 18% from IRA-35 after 5 BV. The 5% NH4OH eluted all lactic acid from the MWA-1 column in 1.5 BV with a max. effluent concn. of 113 mg/mL. The simple recovery scheme employed was not sufficient to produce heat-stable lactic acid. Other broth components were also adsorbed by the basic sorbents and could not be removed during the rinse step, but eluted with lactic acid during the desorption step.

ACCESSION NUMBER: 1996:324821 CAPLUS
 DOCUMENT NUMBER: 125:8533
 TITLE: Recovery and purification of lactic acid from fermentation broth by adsorption
 AUTHOR(S): Evangelista, Roque L.; Nikolov, Zivko L.
 CORPORATE SOURCE: Dep. Food Sci. Human Nutr., Iowa State Univ., Ames, IA, 50011, USA
 SOURCE: Appl. Biochem. Biotechnol. (1996), 57/58 (Seventeenth Symposium on Biotechnology for Fuels and Chemicals, 1995), 471-480
 CODEN: ABIBDL; ISSN: 0273-2289
 DOCUMENT TYPE: Journal
 LANGUAGE: English

L6 ANSWER 6 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB The invention relates to a method for prep. an org. acid or its salt by a continuous process. In accordance with the invention, a feed soln. is continuously passed into a bioreactor contg. microorganisms bound to a solid carrier, the acidic soln. withdrawn from the bioreactor is passed through a column on an anion exchanger regenerated with alkali metal hydroxide, the feed soln. withdrawn from the anion exchange column is recycled to the bioreactor, and at suitable intervals, the feed soln. is displaced by water and the anion exchange resin is regenerated with alkali metal hydroxide to recover the acid as an alkali salt. If acid is the desired end product, the alkali metal salt soln. is passed through a column of a **cation exchanger** in H+-form to yield an acid.

ACCESSION NUMBER: 1996:50600 CAPLUS
 DOCUMENT NUMBER: 124:85057
 TITLE: A method for preparing an organic acid or its salt
 INVENTOR(S): Hammond, Roger; Hannikainen, Jaakko; Viljava, Tapi
 PATENT ASSIGNEE(S): Cultor Oy, Finland

SOURCE: PCT Int. Appl., 22 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9532301	A1	19951130	WO 1995-FI277	19950522
W:	AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT			
RW:	KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG			
FI 9402403	A	19951125	FI 1994-2403	19940524
AU 9525668	A1	19951218	AU 1995-25668	19950522
PRIORITY APPLN. INFO.:			FI 1994-2403	19940524
			WO 1995-FI277	19950522

L6 ANSWER 7 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB A process is disclosed for extg. pure lactic acid from fermn. broths by ion exchange chromatog. on a strongly acid **cation exchanger**, preferably in the H⁺ form. In a 1st step, the NH₄-lactate coming from the fermn. is converted by authentic ion exchange into the free acid. Preferably said conversion is carried out on a weakly acid **cation exchanger** in the H⁺ form.

ACCESSION NUMBER: 1994:653892 CAPLUS

DOCUMENT NUMBER: 121:253892

TITLE: Lactic acid extraction and purification process

INVENTOR(S): Sarhaddar, Schahroch; Scheibl, Anton; Berghofer, Emmerich; Cramer, Adalbert

PATENT ASSIGNEE(S): Vogelbusch G.m.b.H., Austria

SOURCE: PCT Int. Appl., 43 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9419307	A1	19940901	WO 1994-AT16	19940217
W:	FI, JP, US			
RW:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE			
EP 684941	A1	19951206	EP 1994-906087	19940217
EP 684941	B1	19971029		
R:	DE, FR, GB, IT, NL			
FI 9503883	A	19950911	FI 1995-3883	19950817
US 5641406	A	19970624	US 1995-505166	19951010
PRIORITY APPLN. INFO.:		AT 1993-310		19930218
		WO 1994-AT16		19940217

L6 ANSWER 8 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB The method comprises indirect extn. of ions from an aq. soln. with a water-immiscible org. extractant to yield a loaded extractant where the soln. and the extractant are sepd. by a solute-permeable **cation exchanger**. The app. comprises a ion-exchange membrane module and means for the sep. introduction and withdrawal of aq. and org. phases, whereby these phases circulate at the 2 sides of each membrane in the module. The method and app. are applicable, among others, for the recovery of carboxylic acids from fermn. broths.

ACCESSION NUMBER: 1994:110646 CAPLUS

DOCUMENT NUMBER: 120:110646

TITLE: Method and apparatus for liquid-liquid extraction

INVENTOR(S): across ion-exchange membranes
Kedem, Ora; Bromberg, Lev; Eyal, Aharon M.
PATENT ASSIGNEE(S): Yeda Research and Development Co. Ltd., Israel
SOURCE: Eur. Pat. Appl., 19 pp.
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 574717	A2	19931222	EP 1993-108101	19930518
EP 574717	A3	19940525		
R: CH, DE, ES, FR, GB, IT, LI, NL				
PRIORITY APPLN. INFO.:			IL 1992-101901	19920518
			IL 1992-101905	19920518

L6 ANSWER 9 OF 15 CAPLUS COPYRIGHT 2001 ACS
AB Lactic acid (I) is inexpensively and continuously purified from ferment. broth contg. I salts (alkali or alk. earth metals) by removal of lactic acid bacteria, chromatog. on a cation exchange resin, concn. to .gtorsim. 80% I, and distn. of the conc. at reduced pressure. Ferment. broth contg. I Na salt (manufd. in a bioreactor) was treated with Diaion SK IB (cation exchanger), concd. until .gtoreq.90%, and distd. at .ltoreq.130.degree. and 5 mmHg to give high-purity I. The purifn. app. is described.

ACCESSION NUMBER: 1989:476553 CAPLUS
DOCUMENT NUMBER: 111:76553
TITLE: Purification of lactic acid from fermentation broth
INVENTOR(S): Obara, Hitomi
PATENT ASSIGNEE(S): Shimadzu Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01091788	A2	19890411	JP 1987-248592	19870930
JP 07089942	B4	19951004		

L6 ANSWER 10 OF 15 CAPLUS COPYRIGHT 2001 ACS
AB In order to obtain a higher yield of the final product during manufg. of Ca lactate [814-80-2], a mother liquor was purified by passing through cation and then anion exchangers at the flow rate of 150 mL/cm²/h, giving lactic acid [50-21-5] which was reused in the manufg. process. The method was efficient with an 80% lactic acid yield. By vol., a cation exchanger (KU-2-8 [11118-20-0]) purifies 10 vol., and anion exchangers (AV-17P [37360-78-4], AV-17-8 [12642-25-0], and AV-16GS [12626-33-4]) purify 30 vol. of lactic acid.

ACCESSION NUMBER: 1987:90148 CAPLUS
DOCUMENT NUMBER: 106:90148
TITLE: Recovery of calcium lactate mother liquor by using ion exchangers.
AUTHOR(S): Shkurina, O. V.; Dauksa, V. E.
CORPORATE SOURCE: Kursk. Med. Inst., Kursk, USSR
SOURCE: Khim.-Farm. Zh. (1986), 20(11), 1375-7
CODEN: KHFZAN; ISSN: 0023-1134
DOCUMENT TYPE: Journal
LANGUAGE: Russian

L6 ANSWER 11 OF 15 CAPLUS COPYRIGHT 2001 ACS
AB The removal of Na, Ca, K, and Fe from lactic acid (I) [50-21-5] solns. is performed best on the cation exchanger KU 2

[11098-94-5]. On this exchanger the order of ion retention is: $\text{Ca}^{2+} > \text{K}^+ > \text{Na}^+ > \text{Fe}^{3+}$. The appearance of Fe^{3+} in the eluate indicates that KU 2 is spent. The removal of Cl^- and SO_4^{2-} from I soln. is conducted best on AV 17-2P [37380-51-1] anion exchanger, initially in the OH^- form. The introduction of I converts AV 17-2P to the lactate form. Since I anion is retained more strongly than Cl^- or SO_4^{2-} , the latter anions can be removed.

ACCESSION NUMBER: 1984:474731 CAPLUS
DOCUMENT NUMBER: 101:74731
TITLE: Purification of industrial lactic acid solutions with ion exchangers
AUTHOR(S): Zeleneva, N. A.; Shamritskaya, I. P.; Ivanova, E. V.
CORPORATE SOURCE: Voronezh. Tekhnol. Inst., Voronezh, USSR
SOURCE: Teor. Prakt. Sorbtsionnykh Protsessov (1983), 16, 114-17
CODEN: TPRSBE
DOCUMENT TYPE: Journal
LANGUAGE: Russian

L6 ANSWER 12 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB Levulose [57-48-7] and dextrose [50-99-7] in raw sugar and HCO_2H [64-18-6], AcOH [64-19-7], propionic acid [79-09-4], butyric acid [107-92-6], and lactic acid [50-21-5] in molasses, sweetwater and raw sugar were the main components sepd. on columns contg. HPX 87 [74504-51-1] in Ca and H form using H_2O and 0.05 N H_2SO_4 as eluent, resp.

ACCESSION NUMBER: 1981:571399 CAPLUS
DOCUMENT NUMBER: 95:171399
TITLE: Analysis of sugars and organic acids
AUTHOR(S): Charles, Donald F.
CORPORATE SOURCE: California and Hawaiian Sugar Co., Crockett, CA, USA
SOURCE: Int. Sugar J. (1981), 83(991), 195-9
CODEN: ISUJA3; ISSN: 0020-8841
DOCUMENT TYPE: Journal
LANGUAGE: English

L6 ANSWER 13 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB Lactic acid [50-21-5] was obtained by culturing *Streptococcus lactis*, sepg. the antibiotic nisin, treating the residual liq. with alkali up to pH 9.5-9.8, and filtering the residue. The soln. was purified by passing 1st through a **cation exchanger** (sulfopolystyrene resin in H⁺ form) and then an anion exchanger (condensed type having secondary, tertiary, and quaternary aliph. amino groups), with subsequent desorption with H_2SO_4 .

ACCESSION NUMBER: 1980:530609 CAPLUS
DOCUMENT NUMBER: 93:130609
TITLE: Lactic acid
INVENTOR(S): Vozlinskii, M. M.; Sileva, M. N.; Bulenkov, G. I.; Strakhova, G. D.
PATENT ASSIGNEE(S): All-Union Scientific-Research Institute of Microbiological Plant-Protecting Ag, USSR
SOURCE: U.S.S.R. From: Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki 1980, (19), 91.
CODEN: URXXAF

DOCUMENT TYPE: Patent
LANGUAGE: Russian

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 735590	T	19800525	SU 1977-2543572	19771115

L6 ANSWER 14 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB Lactic acid (I) [50-21-5] was obtained from whey by pasteurization at 72-5.degree. and fermn. for 15-20 h at pH 5.4-5.7 using *Lactobacillus lactis* and *L. bulgaricus* 168, 1711, 1712, and 2592 bacteria strains. The soln. was then heated to 85-90.degree., pptd. proteins and salts

centrifuged, and the supernatant passed through a column filled with

cation exchanger to convert NH4 lactate into I.

ACCESSION NUMBER: 1977:532339 CAPLUS
DOCUMENT NUMBER: 87:132339
TITLE: Lactic acid from whey
INVENTOR(S): Poznanski, Stefan; Kornacki, Kazimierz; Smietana, Zbigniew; Rymaszewski, Jerzy; Surazynski, Aleksander; Jakubowski, Jerzy; Chojnowski, Wladyslaw
PATENT ASSIGNEE(S): Akademia Rolniczo-Techniczna, Pol.
SOURCE: Pol., 2 pp.
CODEN: POXXA7
DOCUMENT TYPE: Patent
LANGUAGE: Polish
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PL 86492	P	19760531	PL 1973-163278	19730612

L6 ANSWER 15 OF 15 CAPLUS COPYRIGHT 2001 ACS

AB The monoprotic acids present in hydrolyzates from alkali cellulose prepd. from cotton were detd. by column and paper chromatog. Purified cotton was cut into 20-mm. lengths, mercerized for 1 hr. at 25.degree. in 18% NaOH, and the resulting alkali cellulose was pressed to 33% cellulose content and aged in an autoclave at 33.degree. and 2 atm. for 200 hrs. Traces of alkali were removed by immersion in 0.5% HOAc for 1 hr. and the sample was dried to yield aged alkali cellulose with 5.1 meq./100 g. CO2H content. A 43% HCl soln. (5 l.) was used to hydrolyze 250 g. alkali cellulose for 6 hrs. The HCl was evapd. in vacuo at 35.degree. and the concd. hydrolyzate was dild. to 1.8 l. and boiled for 5 hrs. The hydrolyzate contg. 900 meq. HCl was passed through an ion-exchange column contg. Dowex 2-X8 anion exchanger in the acetate form and the collected eluent contained the sugars and lactones of the org. acids. The monoprotic acids were eluted with 12 l. 5M HOAc, although the fractions were titrated with NaOH to pH 8 and maintained at this pH for 4 hrs. to saponify the lactones. The sugar-saponifiable lactone fraction was passed through a column and the collected effluent was concd. in vacuo, and the combined fractions were then eluted with 250 ml. 0.5M NaOAc and isolated by passing through a H **cation exchanger** to yield 820 mg. acid fraction. The org. acids were sep'd. on a preparative anion-exchange column by elution with 0.5M HOAc and 0.5M NaOAc. Paper chromatog. and gas chromatog.-mass spectrometry were also used to det. the acids present. Sugars present were detd. by partition chromatog. on an anion exchanger in the sulfate form. Large amts. of arabinic, erythronic, mannonic, and glycolic acid end groups were present. Minor amts. of gluconic, ribonic, and glyceric acids were present, but no glucometasaccharinic units were detd. The major reaction during aging is oxidn. at the C-2 or C-3 position followed by β -alkoxy elimination and formation of the glucose end group in the cellulose chain, which is further attacked to yield aldonic acid end groups.

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